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LLNL-TR-459195

EEMP Summary for NIF shot: N101004-002-999

J. Kimbrough

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Disclaimer

This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

EEMP summary for NIF shot: N101004-002-999

Preliminary

A.Throop 10/05 08:30

The National Ignition Facility

Non-damaging EMP fields
(no damage reports).
Low EMP. Similar to, slightly lower than, similar N100821 shot below.

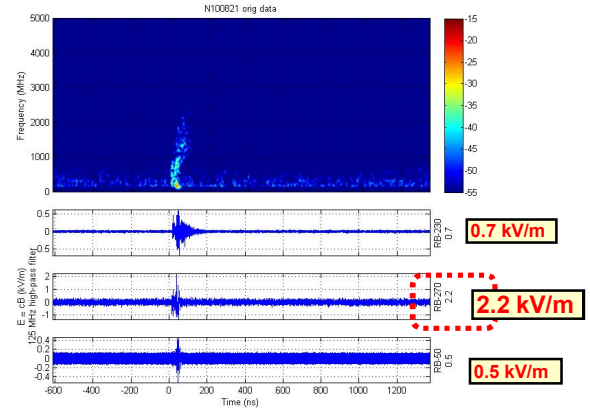
Internal EMP peak field*: ~0.8 kV/m**

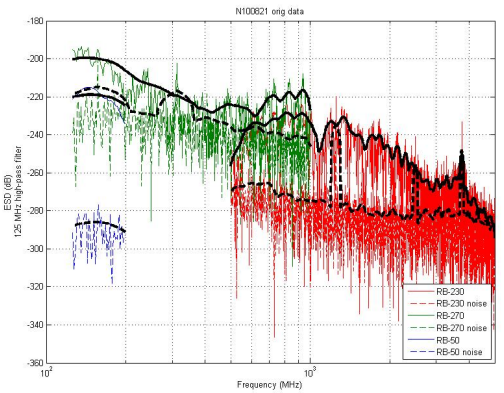
*at R = 4.0m from TCC, for B270 Bdot sensor (1GHz bandwidth).
Fields may vary ~ $1/R^2$, so fields at R = 1m could be ~16x larger than those reported here.
** Qlook2 w/ spectrum analysis

Shot ID: IT_0_Symcap_S03t
Laser: 1.06 MJ; ~Hahn ~3ns; 188b, 47q.
Target: Cold gas Hohl: Au, 359T He4.
Cap: 6%D+70%He3, 2992T=3.93atm
Notes: Neutron Yield ~NA.

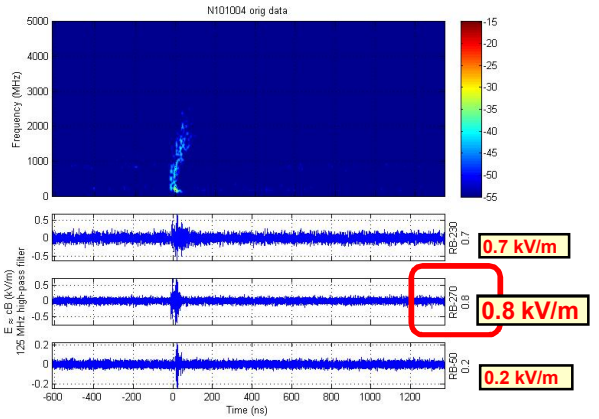
Basis =>	QLOOK	Long Pulse	Long Pulse	
Peak E-field	Code	Sprd Spect	Sprd Spect	T. Chamber
=>	(kV/m)	Est (kV/m)	Est (V/m)	attn (x)
	internal	internal	external	
B230 (5GHz)	0.70	0.70	NA	NA
B270 (1 GHz)	0.80	1.70	4	425
B50 (0.2 GHz)	0.20	0.58	6.6	88

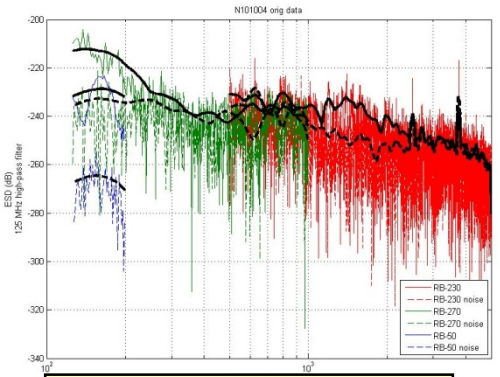
COMPARISON: N100821, 1.04 MJ, IT_0_Symcap_s07h





THIS SHOT: N101004-002, 1.06 MJ, IT_0_Symcap_S03t

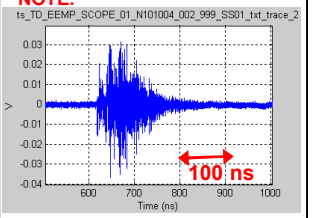




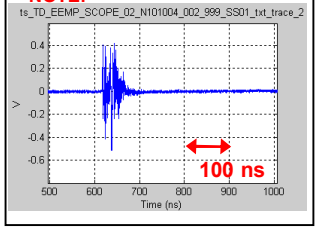
NOTE: S/N improves if use alternate channels for spectra.

THIS SHOT Waveforms ↓

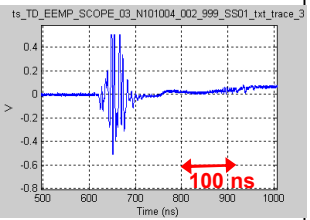
B230intT (1 GHz) waveform:
NOTE:



B270intT (1 GHz) waveform:
NOTE:



B50intT (0.2 GHz) waveform:
NOTE:



N100821: Waveforms ↓